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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,345	05/10/2001	Robert Edward Fontana JR.	ARC920010017US1	7852

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LUMEN INTELLECTUAL PROPERTY SERVICES, INC.  
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EXAMINER

MCPHERSON, JOHN A

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 07/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/853,345

Applicant(s)

FONTANA ET AL.

Examiner

John A. McPherson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2001 and 02 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 25-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1-24 in Paper No. 8 is acknowledged. The traversal is on the ground(s) that the Office Action has failed to completely describe a materially different process for making the claimed product. This is not found persuasive because the product as claimed can be made by another and materially different process such as a single layer lift-off method comprising the steps of patterning a resist layer on a magnetoresistive layer, etching the portion of the magnetoresistive layer not covered by the resist pattern, depositing a layer of additional material, removing the additional material from the sidewalls of the resist material, and lifting-off the resist pattern, thereby providing for clean lift-off during the formation of very narrow structures while making a magnetic sensor.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 25-27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-24 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S.

Patent No. 6,493,926 to Han et al. (Han). Han discloses a method of forming a bi-layer lift-off mask for use in fabricating a MR sensor with a narrow trackwidth of less than 0.5 microns comprising the steps of providing a substrate, forming a GMR layer on the substrate, forming a layer of PMGI on the GMR layer, forming a photoresist layer on the PMGI layer, and patterning and developing the photoresist layer and PMGI layer so as to form a suspension-bridge shaped bi-layer structure, wherein the width of the bridge portion is between 0.05 microns and 0.5 microns. See the abstract; column 5, lines 55-76; and column 6, lines 51-56.

4. Claims 1-24 are rejected under 35 U.S.C. 102(a) as being anticipated by JP - 2001-043515 (JP '515). JP '515 discloses a mask pattern formation method for manufacturing a thin film magnetic head comprising the steps of applying a first and second resist onto a SV film, forming a latent image in the second resist, developing the second resist to form an upper layer mask pattern, and removing a part of the first resist using a developer which hardly dissolves the second resist to create a bridge portion on the upper mask pattern. See the abstracts and Figures 3-10. Additionally, JP '515

discloses that a device having a line width of 0.5 microns or less can be produced using the mask pattern (based on an oral translation obtained by the Examiner of paragraph [0120]).

5. Claims 1-24 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,187,513 to Katakura (Katakura). Katakura discloses a process for forming mask patterns comprising the steps of coating a first resist on a surface, exposing the first resist to form a pattern latent image, coating a second resist on the first resist, exposing the second resist to form a pattern latent image, developing the second resist to form an upper layer mask pattern, developing the first resist to form a lower layer mask pattern, wherein the upper layer mask pattern has a bridge part. See the abstract; column 7, line 4 to column 10, line 13. Furthermore, a device having a line width of 0.5 microns or less can be easily produced using the mask pattern. See column 16, lines 10-20.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-028110 (JP '110). JP '110 discloses a method for manufacturing a magneto-

resistive head comprising the steps of forming a magneto-resistive film on a lower part gap film, forming a double layered resist consisting of a lower layer resist and an upper layer resist on the magneto-resistive film, forming a double layered resist pattern having a width  $W$  corresponding to the track width of the magneto-resistive head, forming a lower resist hollow section by dissolving the width corresponding to the track width in the lower resist thereby forming a lift-off pattern, machining the magneto-resistive film in a prescribed shape using the lift-off pattern, and forming a magnetic domain controlling film and an electrode film using the lift-off pattern (see that abstracts and Figures 1-2). Furthermore, JP '110 discloses that the ratio  $L/W$  of the length  $L$  to the width  $W$  of the upper resist pattern should be 15 or less (based on an oral translation obtained by the Examiner of paragraph [0026], also see the attached computer-generated translation). However, JP '110 only exemplifies an upper resist pattern having a width of 0.4 microns (see paragraph [0026]), not less than 0.2 microns as in the present invention. It would have been obvious to one skilled in the requisite art to reduce the width of the upper resist pattern to less than 0.2 microns in the process of JP '110 because it is taught that other widths are obtainable as long as the ratio  $L/W$  is less than 15, and it is taught that achieving higher recording densities requires the width of the upper resist layer to be made smaller (see paragraph 0007)).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. McPherson whose telephone number is (703)

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308-2302. The examiner can normally be reached on Monday through Friday, 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (703) 308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



John A. McPherson  
Primary Examiner  
Art Unit 1756

JAM  
July 17, 2003